



6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R04-OAR-2018-0665; FRL-9992-52-Region 4]

Air Plan Approval; SC; 2010 1-Hour SO₂ NAAQS Transport Infrastructure

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve South Carolina's June 25, 2018, State Implementation Plan (SIP) submission pertaining to the "good neighbor" provision of the Clean Air Act (CAA or Act) for the 2010 1-hour sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS). The good neighbor provision requires each state's implementation plan to address the interstate transport of air pollution in amounts that contribute significantly to nonattainment, or interfere with maintenance, of a NAAQS in any other state. In this action, EPA is proposing to determine that South Carolina's SIP contains adequate provisions to prohibit emissions within the State from contributing significantly to nonattainment or interfering with maintenance of the 2010 1-hour SO₂ NAAQS in any other state.

DATES: Written comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R04-OAR-2018-0665 at <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. EPA may publish any comment received to its public docket. Do not submit electronically any information

you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

FOR FURTHER INFORMATION CONTACT: Michele Notarianni, Air Regulatory Management Section, Air Planning and Implementation Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. Ms. Notarianni can be reached via phone number (404) 562-9031 or via electronic mail at notarianni.michele@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Background

A. Infrastructure SIPs

On June 2, 2010, EPA promulgated a revised primary SO₂ NAAQS with a level of 75 parts per billion (ppb), based on a 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. *See* 75 FR 35520 (June 22, 2010). Pursuant to section 110(a)(1) of the CAA, states are required to submit SIPs meeting the applicable requirements of section 110(a)(2) within three years after promulgation of a new or revised NAAQS or within such shorter period as EPA may prescribe. These SIPs, which EPA has historically referred to as “infrastructure SIPs,” are to provide for the “implementation, maintenance, and enforcement” of

such NAAQS, and the requirements are designed to ensure that the structural components of each state's air quality management program are adequate to meet the state's responsibility under the CAA. Section 110(a) of the CAA requires states to make a SIP submission to EPA for a new or revised NAAQS, but the contents of individual state submissions may vary depending upon the facts and circumstances. The content of the changes proposed in such SIP submissions may also vary depending upon what provisions the state's approved SIP already contains. Section 110(a)(2) requires states to address basic SIP elements such as requirements for monitoring, basic program requirements, and legal authority that are designed to assure attainment and maintenance of the NAAQS. A detailed history, interpretation, and rationale of these SIPs and their requirements can be found in, among other documents, EPA's March 7, 2016 (81 FR 11718), notice of proposed rulemaking related to infrastructure SIP requirements for the 2010 1-hour SO₂ NAAQS for South Carolina in the section titled, *What is EPA's approach to the review of infrastructure SIP submissions?*

Section 110(a)(2)(D)(i)(I) of the CAA requires SIPs to include provisions prohibiting any source or other type of emissions activity in one state from emitting any air pollutant in amounts that will contribute significantly to nonattainment, or interfere with maintenance, of the NAAQS in another state. The two clauses of this section are referred to as prong 1 (significant contribution to nonattainment) and prong 2 (interference with maintenance of the NAAQS).

On June 25, 2018, the South Carolina Department of Health and Environmental Control (SC DHEC) submitted a revision to the South Carolina SIP addressing only prongs 1 and 2 of CAA section 110(a)(2)(D)(i)(I) for the 2010 1-hour SO₂ NAAQS.¹ EPA is proposing to approve SC DHEC's June 25, 2018, SIP submission which certifies that existing SIP provisions satisfy

¹ On May 8, 2014, SC DHEC submitted a SIP revision addressing all infrastructure elements with respect to the 2010 1-hour SO₂ NAAQS with the exception of prongs 1 and 2 of CAA 110(a)(2)(D)(i)(I).

the State's obligation for prongs 1 and 2 for the 2010 1-hour SO₂ NAAQS. All other elements related to the infrastructure requirements of section 110(a)(2) for the 2010 1-hour SO₂ NAAQS for South Carolina are addressed in separate rulemakings.²

B. EPA's Designations for the 2010 1-Hour SO₂ NAAQS

In this action, EPA has considered information from the 2010 1-hour SO₂ NAAQS designations process, as discussed in more detail in section III.C of this document. For this reason, a brief summary of EPA's designations process for the 2010 1-hour SO₂ NAAQS is included here.³

After the promulgation of a new or revised NAAQS, EPA is required to designate areas as "nonattainment," "attainment," or "unclassifiable," pursuant to section 107(d)(1) of the CAA. The process for designating areas following promulgation of a new or revised NAAQS is contained in section 107(d) of the CAA. The CAA requires EPA to complete the initial designations process within two years of promulgating a new or revised standard. If the Administrator has insufficient information to make these designations by that deadline, EPA has the authority to extend the deadline for completing designations by up to one year.

EPA promulgated the 2010 1-hour SO₂ NAAQS on June 2, 2010. *See* 75 FR 35520 (June 22, 2010). EPA completed the first round of designations for the 2010 1-hour SO₂ NAAQS on July 25, 2013, designating 29 areas in 16 states as nonattainment for the 2010 1-hour SO₂

² EPA acted on the other elements of South Carolina's May 8, 2014, infrastructure SIP submission for the 2010 1-hour SO₂ NAAQS on May 24, 2016 (81 FR 32651) and September 24, 2018 (83 FR 48237).

³ While designations may provide useful information for purposes of analyzing transport, particularly for a more source-specific pollutant such as SO₂, EPA notes that designations themselves are not dispositive of whether or not upwind emissions are impacting areas in downwind states. EPA has consistently taken the position that as to impacts, CAA section 110(a)(2)(D) refers only to prevention of 'nonattainment' in other states, not to prevention of nonattainment in designated nonattainment areas or any similar formulation requiring that designations for downwind nonattainment areas must first have occurred. *See e.g.*, Clean Air Interstate Rule, 70 FR 25162, 25265 (May 12, 2005); Cross-State Air Pollution Rule, 76 FR 48208, 48211 (Aug. 8, 2011); Final Response to Petition from New Jersey Regarding SO₂ Emissions From the Portland Generating Station, 76 FR 69052 (Nov. 7, 2011) (finding facility in violation of the prohibitions of CAA section 110(a)(2)(D)(i)(I) with respect to the 2010 1-hour SO₂ NAAQS prior to issuance of designations for that standard).

NAAQS. *See* 78 FR 47191 (August 5, 2013). EPA based this first round of final SO₂ designations on monitored SO₂ concentrations violating the 2010 1-hour SO₂ standard. Following the initial August 5, 2013, designations, three lawsuits were filed against EPA in different U.S. District Courts, alleging that the Agency had failed to perform a nondiscretionary duty under the CAA by not designating all portions of the country within the time lines set forth in section 107(d)(1)(B) of the CAA. In an effort intended to resolve the litigation in one of those cases, EPA and the plaintiffs, Sierra Club and the Natural Resources Defense Council, filed a proposed consent decree with the U.S. District Court for the Northern District of California. On March 2, 2015, the court entered the consent decree⁴ which requires EPA to sign for publication in the *Federal Register* notices of the Agency's promulgation of area designations by three specific deadlines: July 2, 2016 ("round 2"); December 31, 2017 ("round 3"); and December 31, 2020 ("round 4").⁵

On August 21, 2015 (80 FR 51052), EPA separately promulgated air quality characterization requirements for the 2010 1-hour SO₂ NAAQS in the Data Requirements Rule (DRR). The DRR required state air agencies to characterize air quality, through air dispersion modeling or monitoring, in areas associated with sources that emitted greater than 2,000 tons per year (tpy) of SO₂, or that have otherwise been listed under the DRR by EPA or state air agencies. In lieu of modeling or monitoring, state air agencies, by specified dates, could elect to impose federally-enforceable emissions limitations on those sources restricting their annual SO₂ emissions to 2,000 tpy or less, or provide documentation that the sources have been shut down. EPA expected that the information generated by implementation of the DRR would help inform SO₂ designations specified in the March 2, 2015, consent decree. EPA signed *Federal Register*

⁴ Consent Decree, *Sierra Club v. McCarthy*, Case No. 3:13-cv-3953-SI (N.D. Cal. Mar. 2, 2015).

⁵ The term "round" in this instance refers to which "round of designations."

notices of promulgation of round 2 designations⁶ on June 30, 2016 (81 FR 45039 (July 12, 2016)), and on November 29, 2016 (81 FR 89870 (December 13, 2016)), and round 3 designations⁷ on December 21, 2017 (83 FR 1098 (January 9, 2018)). For South Carolina, EPA designated all counties as attainment/unclassifiable in round 3. Because all counties in South Carolina are now designated for the 2010 1-hour SO₂ NAAQS, and no DRR sources in the State opted to monitor to inform Round 4 SO₂ designations, no areas in South Carolina will be designated in round 4.⁸ There are no nonattainment areas in South Carolina for the 2010 1-hour SO₂ NAAQS.⁹

II. Relevant Factors Used to Evaluate 2010 1-Hour SO₂ Interstate Transport SIPs

Interstate transport of SO₂ is unlike the transport of fine particulate matter (PM_{2.5}) or ozone in that SO₂ is not a regional pollutant and does not commonly contribute to widespread nonattainment over a large (and often multi-state) area. The transport of SO₂ is more analogous to the transport of lead (Pb) because its properties result in localized pollutant impacts very near the emissions source. However, ambient concentrations of SO₂ do not decrease as quickly with

⁶ EPA and state documents and public comments related to the round 2 final designations are in the docket at regulations.gov with Docket ID NO. EPA-HQ-OAR-2014-0464 and at EPA's website for SO₂ designations at <https://www.epa.gov/sulfur-dioxide-designations>.

⁷ EPA and state documents and public comments related to round 3 final designations are in the docket at regulations.gov with Docket ID NO. EPA-HQ-OAR-2017-0003 and at EPA's website for SO₂ designations at <https://www.epa.gov/sulfur-dioxide-designations>.

⁸ See *Technical Support Document: Chapter 37 Final Round 3 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard for South Carolina* at <https://www.epa.gov/sites/production/files/2017-12/documents/37-sc-so2-rd3-final.pdf>. See also *Technical Support Document: Chapter 37 Intended Round 3 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard for South Carolina* at https://www.epa.gov/sites/production/files/2017-08/documents/38sc_so2_rd3-final.pdf.

⁹ On August 5, 2013 (78 FR 47191) and effective October 4, 2013, EPA designated 29 areas in 16 states as nonattainment for the 2010 1-hour SO₂ NAAQS based on violating monitors using air quality data for the years 2009-2011, but did not, at that time, designate other areas in the country. On July 12, 2016 (81 FR 45039), effective September 12, 2016, and December 13, 2016 (81 FR 89870), effective January 12, 2017, EPA published a final rule establishing air quality designations for 65 areas in 24 states for the 2010 SO₂ NAAQS including seven nonattainment areas, 41 attainment/unclassifiable areas, and 17 unclassifiable areas. On January 9, 2018 (83 FR 1098) effective April 9, 2018, EPA designated six areas as nonattainment; 23 areas as unclassifiable; and the rest of the areas covered by this round in all states, territories, and tribal lands as attainment/unclassifiable. No areas in South Carolina were designated as nonattainment in these actions. See <https://www.epa.gov/sulfur-dioxide-designations/sulfur-dioxide-designations-regulatory-actions>.

distance from the source as Pb because of the properties and typical release heights of SO₂. Emissions of SO₂ travel farther and have wider ranging impacts than emissions of Pb, but do not travel far enough to be treated in a manner similar to ozone or PM_{2.5}. The approaches that EPA has adopted for ozone or PM_{2.5} transport are too regionally focused and the approach for Pb transport is too tightly circumscribed to the source. SO₂ transport is therefore a unique case and requires a different approach.

Given the properties of SO₂, EPA agrees with South Carolina's selection of a spatial scale with dimensions from four to 50 kilometers (km) from point sources – the “urban scale” – to assess trends in area-wide air quality that might impact downwind states.¹⁰ SC DHEC selected the urban scale as appropriate for assessing trends in both area-wide air quality and the effectiveness of large-scale pollution control strategies at SO₂ point sources. SC DHEC supported this transport distance threshold with references to 40 CFR 58, Appendix D, Section 4.4.4(4) “Urban scale”, which states that measurements in this scale would be used to estimate SO₂ concentrations over large portions of an urban area with dimensions from four to 50 km. The State also notes that 50 km is the transport distance threshold that EPA recommends for use with the air quality dispersion model called the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). AERMOD is EPA's preferred modeling platform for regulatory purposes (Appendix W of 40 CFR part 51).¹¹ EPA agrees with the State's selection and application of the 50-km threshold as a reasonable distance to evaluate

¹⁰ For the definition of spatial scales for SO₂, please see 40 CFR part 58, Appendix D, section 4.4 (“Sulfur Dioxide (SO₂) Design Criteria”). For further discussion on how EPA applies these definitions with respect to interstate transport of SO₂, see EPA's notice of proposed rulemaking on Connecticut's SO₂ transport SIP. 82 FR 21351, 21352, 21354 (May 8, 2017).

¹¹ EPA established a non-binding technical assistance document to assist states and other parties in their efforts to characterize air quality through air dispersion modeling for sources that emit SO₂ titled, “SO₂ NAAQS Designations Modeling Technical Assistance Document. This draft document was first released in spring 2013. Revised drafts were released in February and August of 2016 (see <https://www.epa.gov/sites/production/files/2016-06/documents/so2modelingtad.pdf>).

emission source impacts into neighboring states and to assess air quality monitors within 50 km of the State's border, which is discussed further in section III.C.

As discussed in sections III.C and III.D, EPA first reviewed the State's analysis to assess how the State evaluated the transport of SO₂ to other states, the types of information used in the analysis, and the conclusions drawn by the State. EPA then conducted a weight of evidence analysis based on a review of the State's submission and other available information, including SO₂ air quality and available source modeling for states within 50 km of the South Carolina border.¹²

III. South Carolina's SIP Submission and EPA's Analysis

A. State Submission

On June 25, 2018, SC DHEC submitted a revision to the South Carolina SIP addressing prongs 1 and 2 of CAA section 110(a)(2)(D)(i)(I) for the 2010 1-hour SO₂ NAAQS. South Carolina conducted a weight of evidence analysis to examine whether SO₂ emissions from the State adversely affect attainment or maintenance of the 2010 1-hour SO₂ NAAQS in downwind states.

SC DHEC reviewed the following information to support its conclusion that South Carolina does not significantly contribute to nonattainment or interfere with maintenance of the 2010 1-hour SO₂ NAAQS in downwind states: trends in SO₂ design values (DVs)¹³ at the State's

¹² This proposed approval action is based on the information contained in the administrative record for this action, and does not prejudice any future EPA action that may make other determinations regarding the air quality status in South Carolina and downwind states. Any such future action, such as area designations under any NAAQS, will be based on their own administrative records and the EPA's analyses of information that becomes available at those times. Future available information may include, and is not limited to, monitoring data and modeling analyses conducted pursuant to EPA's DRR and information submitted to EPA by states, air agencies, and third-party stakeholders such as citizen groups and industry representatives.

¹³ A "Design Value" is a statistic that describes the air quality status of a given location relative to the level of the NAAQS. The DV for the primary 2010 1-hour SO₂ NAAQS is the 3-year average of annual 99th percentile daily maximum 1-hour values for a monitoring site. The interpretation of the primary 2010 1-hour SO₂ NAAQS

air quality monitors from 2008-2017; highest monitored SO₂ DVs for monitors with complete, quality-assured data and located within South Carolina and within Florida, Georgia, and North Carolina; SO₂ emissions trends both statewide (for the years 2008, 2011, and 2014) and for the State's title V sources (for the years 2008-2016); available SO₂ modeling data for the State's round 3 DRR-subject sources; and State and federal regulations and State statutes that establish requirements for sources of SO₂ emissions. South Carolina noted that federal regulations and competition from lower natural gas prices resulted in four coal-fired electric generating units (EGUs) within the State either shutting down or switching to cleaner fuels. The State identified these units and summarized the history of the shutdowns and switches to cleaner fuels. South Carolina also included SO₂ emissions trends for the Southeast from 2000-2016 and noted that there is a consistent downward trend.

Based on this weight of evidence analysis, the State concluded that emissions within South Carolina will not contribute significantly to nonattainment or interfere with maintenance of the 2010 1-hour SO₂ NAAQS in any other state. The State based its conclusions for Prong 1 on the actual and projected downward trends of SO₂ emissions in South Carolina, trends in SO₂ DVs for South Carolina's monitors and other states' monitors within 50 km of the South Carolina border, DRR modeling results, and established federal and State control measures affecting SO₂. The State based its conclusions for Prong 2 on emissions trends of SO₂ in South Carolina and in the Southeast and established federal and State control measures which reduce SO₂ emissions. EPA's evaluation of South Carolina's submission is detailed in sections III.B, C, and D.

B. EPA's Evaluation Methodology

including the data handling conventions and calculations necessary for determining compliance with the NAAQS can be found in Appendix T to 40 CFR Part 50.

EPA believes that a reasonable starting point for determining which sources and emissions activities in South Carolina are likely to impact downwind air quality in other states with respect to the 2010 1-hour SO₂ NAAQS is by using information in EPA's National Emissions Inventory (NEI).¹⁴ The NEI is a comprehensive and detailed estimate of air emissions for criteria pollutants, criteria pollutant precursors, and hazardous air pollutants from air emissions sources that is updated every three years using information provided by the states and other information available to the EPA. EPA used the 2014 NEI (version 2), the most recently available, complete, and quality assured dataset of the NEI. Table 1 shows that point sources in South Carolina contribute approximately 89 percent of the State's total SO₂ emissions, followed by nonpoint sources at six percent and fires at four percent.

Table 1: Summary of 2014 NEI (Version 2) SO₂ Data for South Carolina by Source Category		
Category	Emissions (tpy)	Percent of Total SO₂ Emissions
Point	46,913.26	89
Nonpoint	2,986.99	6
Fire	2,300.06	4
Onroad	546.07	1
Nonroad	47.85	0
SO₂ Emissions Total	52,794.23	100

SC DHEC provided NEI data for the years 2008, 2011, and 2014, which showed a decrease in SO₂ emissions in the State of approximately 73 percent from 2008 to 2014. SC DHEC notes in its submission that the largest sources of SO₂ emissions in South Carolina are power plants and other industrial facilities that burn fossil fuels. According to the NEI data in the State's submission and the 2014 NEI version 2 (shown in Table 2), the majority of SO₂

¹⁴ EPA's NEI is available at <https://www.epa.gov/air-emissions-inventories/national-emissions-inventory>.

emissions in South Carolina originate from fuel combustion at point sources.¹⁵ In 2014, the total SO₂ emissions from fuel combustion point sources in South Carolina comprised approximately 72 percent of the total SO₂ emissions in the State. Because emissions from the other listed source categories are more dispersed throughout the State, those categories are less likely to cause high ambient concentrations when compared to a point source on a ton-for-ton basis. Therefore, EPA believes that it is appropriate to focus the analysis on SO₂ emissions from fuel combustion at South Carolina's point sources which are located within the "urban scale," i.e., within 50 km of one or more state borders.

Table 2: Summary of 2014 NEI (Version 2) SO₂ Data for South Carolina by Source Types	
Category	Emissions (tpy)
Fuel Combustion: EGUs (All Fuel Types)	27,799.38
Fuel Combustion: Industrial Boilers/Internal Combustion Engines (All Fuel Types)	10,243.87
Fuel Combustion: Commercial/Institutional (All Fuel Types)	41.40
Fuel Combustion: Residential (All Fuel Types)	128.74
Industrial Processes (All Categories)	8,963.50
Mobile Sources (All Categories)	2,602.33
Fires (All Types)	2,363.13
Waste Disposal	648.48
Solvent Processes	0.12
Miscellaneous (Non-Industrial)	3.30
SO₂ Emissions Total	52,794.23

EPA's current implementation strategy for the 2010 1-hour SO₂ NAAQS includes the flexibility to characterize air quality for stationary sources via either data collected at ambient air quality monitors sited to capture the points of maximum concentration, or air dispersion

¹⁵ Residential fuel combustion is considered a nonpoint source, and thus, residential fuel combustion data is not included in the point source fuel combustion data and related calculations.

modeling. EPA's assessment of SO₂ emissions from fuel combustion at South Carolina's point sources located within approximately 50 km of another state and their potential impact on neighboring states is informed by all available data at the time of this rulemaking.¹⁶

As discussed in section I.B., many air agencies used air dispersion modeling to characterize air quality in the vicinity of large SO₂ emitting sources to identify the maximum 1-hour SO₂ concentrations in ambient air which informed EPA's round 2 and 3 SO₂ designations. These designations were based on EPA's application of the nationwide analytical approach to, and technical assessment of, the weight of evidence for each area, including but not limited to available air quality monitoring data and air quality modeling results. The 2010 1-hour SO₂ standard is violated at an ambient air quality monitoring site (or in the case of dispersion modeling, at an ambient air quality receptor location) when the 3-year average of the annual 99th percentile of the daily maximum 1-hour average concentrations exceeds 75 ppb, as determined in accordance with Appendix T of 40 CFR part 50. EPA's preferred modeling platform for regulatory purposes is AERMOD (Appendix W of 40 CFR part 51).¹⁷ In most modeling analyses, the impacts of the actual emissions for one or more of the recent 3-year periods (e.g., 2012-2014, 2013-2015, 2014-2016) were considered, and in some cases the modeling was of currently effective limits on allowable emissions in lieu of or as a supplement to modeling of actual emissions.

¹⁶ EPA notes that the evaluation of other states' satisfaction of section 110(a)(2)(D)(i)(I) for the 2010 1-hour SO₂ NAAQS can be informed by similar factors found in this proposed rulemaking, but may not be identical to the approach taken in this or any future rulemaking for South Carolina, depending on available information and state-specific circumstances.

¹⁷ EPA established a draft non-binding technical assistance document to assist states and other interested parties in their efforts to characterize air quality through air dispersion modeling for sources that emit SO₂ titled, "SO₂ NAAQS Designations Modeling Technical Assistance Document." This draft document was first released in spring 2013. Revised drafts were released in February and August of 2016 (*see* <https://www.epa.gov/sites/production/files/2016-06/documents/so2modelingtad.pdf>).

The available air dispersion modeling of large SO₂ sources can support transport related conclusions about whether sources in one state are potentially causing or contributing to violations of the 2010 1-hour SO₂ standard in other states. While AERMOD was not designed specifically to address interstate transport, the 50-km distance that EPA recommends for use with AERMOD aligns with the urban monitoring scale, and thus, EPA believes that the use of AERMOD provides a reliable indication of air quality for transport purposes.

As described in this section, EPA proposes to conclude that an assessment of South Carolina's satisfaction of the prong 1 and 2 requirements under section 110(a)(2)(D)(i)(I) of the CAA for the 2010 1-hour SO₂ NAAQS may be reasonably based upon evaluating the downwind impacts of SO₂ emissions from fuel combustion at South Carolina's point sources located within approximately 50 km of another state and upon any regulations intended to address fuel combustion at South Carolina's point sources.

C. EPA's Prong 1 Evaluation – Significant Contribution to Nonattainment

Prong 1 of the good neighbor provision requires states' plans to prohibit emissions that will significantly contribute to nonattainment of a NAAQS in another state. SC DHEC confirms in its submission that South Carolina's SIP contains adequate provisions to prevent sources and other types of emissions activities within the State from contributing significantly to nonattainment in any other state with respect to the 2010 1-hour SO₂ standard. To evaluate South Carolina's satisfaction of prong 1, EPA assessed the State's implementation plan with respect to the following factors: 1) SO₂ ambient air quality and emissions trends for South Carolina and neighboring states; 2) potential ambient impacts of SO₂ emissions from certain facilities in South Carolina on neighboring states based on available air dispersion modeling results; 3) State statutes and SIP-approved regulations that address SO₂ emissions; and 4)

federally enforceable regulations that reduce SO₂ emissions. A detailed discussion of South Carolina's SIP submission with respect to each of these factors follows.¹⁸ EPA proposes that these factors, taken together, support the Agency's proposed determination that South Carolina's SIP adequately prohibits emissions that will significantly contribute to nonattainment of the 2010 1-hour SO₂ NAAQS in another state. EPA's proposed conclusion is based, in part, on the fact that the Agency does not have information indicating that there are violations of the 2010 1-hour SO₂ NAAQS in the surrounding states. In addition, the downward trends in SO₂ emissions and DVs for air quality monitors in the State, combined with federal and State regulations and statutes affecting SO₂ emissions of South Carolina's sources, further support EPA's proposed conclusion.

1. SO₂ Air Dispersion Modeling

a. State Submission

In its June 25, 2018, SIP revision, SC DHEC summarized how each of the State's sources subject to the DRR elected to comply with this rule by either taking a federally-enforceable limit or using either modeling or monitoring to characterize SO₂ air quality around the source. Of the eight sources in the State subject to the DRR, three accepted federally-enforceable permit limits and five sources conducted dispersion modeling.¹⁹ SC DHEC provided a summary of the air dispersion modeling results for the five modeled sources: Century Aluminum of South Carolina²⁰ (Century Aluminum); International Paper-Eastover Mill (IP Eastover); Resolute FP US INC (Resolute); Santee Cooper Cross Generating Station (Santee Cooper Cross); and

¹⁸ EPA has reviewed South Carolina's submission, and where new or more current information has become available, is including this information as part of the Agency's evaluation of this submission.

¹⁹ South Carolina's DRR sources which accepted federally-enforceable permit limits to exempt out of the DRR requirements are: Duke Energy Carolinas LLC - W.S. Lee Steam Station; South Carolina Electric & Gas (SCE&G) McMeekin Station; and WestRock CP LLC (formerly RockTenn). *See* Docket ID No. EPA-HQ-OAR-2017-0003. Thus, there is no available air dispersion modeling under the DRR for these sources.

²⁰ Century Aluminum was formerly known as Alumax of South Carolina.

SCE&G Wateree Station (SCE&G Wateree). IP Eastover and SCE&G Wateree were modeled together. Of these five sources, one source (Resolute) is within 50 km of another state (North Carolina) at approximately 7 km using the nearest property boundary to North Carolina and modeled a maximum 2010 1-hour SO₂ DV of 69 ppb. SC DHEC notes that Resolute used a modeling grid which extended approximately 4 km into North Carolina. A summary of the modeling results for Resolute, including supplemental data EPA has reviewed as part of the Agency's analysis, is shown in Table 3 of section III.C.1.b of this action.

b. EPA Analysis

For the SO₂ air dispersion modeling factor, EPA evaluated the DRR modeling data in South Carolina's June 25, 2018, submission for sources in the State and supplemented this data with available, existing DRR modeling results for sources in the adjacent states of Georgia and North Carolina that are within 50 km of the South Carolina border.²¹ The purpose of evaluating modeling results in adjacent states within 50 km of the South Carolina border is to ascertain whether these areas are attaining the 2010 1-hour SO₂ standard and, if not, whether any nearby sources in South Carolina are contributing to a NAAQS violation. In addition, EPA identified South Carolina SO₂ emission sources emitting greater than 100 tons of SO₂ in 2017 that are not subject to the DRR and are located up to 50 km from South Carolina's border to evaluate whether the SO₂ emissions from these sources could interact with SO₂ emissions from the nearest source in a neighboring state in such a way as to contribute significantly to nonattainment in that state.

²¹ Appendix A.1 - titled, "AERMOD (AMS/EPA Regulatory Model)" of Appendix W to 40 CFR Part 51 - is appropriate for SO₂ in instances where steady-state assumptions for transport distances up to 50 km occur. While not designed specifically to address interstate transport, the 50-km distance which EPA recommends for use with AERMOD aligns with the urban monitoring scale, and thus, EPA believes that the use of AERMOD provides a reliable indication of SO₂ air quality for transport purposes.

Table 3 provides a summary of the modeling results for Resolute, the one modeled DRR source in South Carolina which is located within 50 km of another state (North Carolina). The modeling analyses for Resolute resulted in no modeled violations of the 2010 1-hour SO₂ NAAQS within the 50-km area surrounding the facility and no violations of the standard within the modeling domain which extends into North Carolina. All other areas within 50 km of Resolute are contained within South Carolina's borders. As a result, no further analysis of any other neighboring states is necessary for assessing the impacts of the interstate transport of SO₂ pollution from Resolute.

Table 4 provides a summary of the modeling results for DRR sources in other neighboring states which are located within 50 km of South Carolina and which elected to provide air dispersion modeling under the DRR: three sources in Georgia (Georgia Power Company - Plant McIntosh (Plant McIntosh), Georgia-Pacific Consumer Products - Savannah River Mill (Savannah River Mill), International Paper - Savannah (IP-Savannah))²² and two sources in North Carolina (Allen Steam Station - Duke Energy Carolinas, LLC (Duke-Allen))²³ and Duke Energy's Marshall Steam Station (Duke-Marshall)).²⁴ The predicted maximum impacts from the model did not violate the 2010 1-hour SO₂ NAAQS for any of the five sources.²⁵

Table 3: South Carolina Sources with DRR Modeling Located Within 50 Km of Another State
--

²² Georgia Power's Plant Kraft is a DRR source located less than 5 km from the South Carolina border which has shut down as of October 13, 2015, and the operating permit was formally revoked on November 9, 2016. The DRR modeling results for Georgia's DRR round 3 sources may be found at:

https://www.epa.gov/sites/production/files/2017-08/documents/10_ga-so2-rd3-final.pdf.

²³ The Duke-Allen facility did not meet the DRR emission threshold of 2,000 tons or more annually. However, North Carolina elected to characterize the area around the source through air dispersion modeling.

²⁴ Given that distances are approximate, the Duke-Marshall facility is included in Table 4 with an approximate distance of 53 km from the South Carolina border.

²⁵ Georgia's Plant McIntosh and Savannah River Mill were modeled together as shown in Table 4.

DRR Source	County	Approximate Distance from Source to Adjacent State	Other Facilities Included in Modeling	2010 1-hour SO ₂ Model DV (ppb)	Model Grid Extends Into Another State?
Resolute	York	7 km	Yes – Duke-Allen (NC); Winthrop University; General Chemicals, LLC; Guardian Industries; Spring Industries – Leroy Plant	69*	Yes - into NC (western portion of Union County in North Carolina)

* Resolute's 2010 1-hour SO₂ modeled DV is based on 2012-2014 actual emissions for Resolute and all North Carolina permitted facilities within 50 km of the source, and allowable emissions for all South Carolina permitted facilities within 50 km of the source.

Table 4: Other State's Sources with DRR Modeling Located Within 50 Km of South Carolina

DRR Source	County (State)	Approximate Distance from Source to South Carolina Border	Other Facilities Included in Modeling	2010 1-hour SO ₂ Model DV (ppb)	Model Grid Extends Into Another State?
Plant McIntosh <i>(Modeled with Savannah River Mill)</i>	Effingham (GA)	Less than 5 km	Effingham County Power (GA); SCE&G-Jasper Generating Station (SC) - <i>(based on allowable/potential to emit (PTE) emissions)</i>	71.6 for both Plant McIntosh and Savannah River Mill <i>(based on 2012-2014 actual emissions for Plant McIntosh)</i>	Yes – into SC (western portion of Jasper County, SC)
Savannah River Mill <i>(Modeled with Plant McIntosh)</i>	Effingham (GA)	Less than 5 km	Effingham County Power (GA); SCE&G-Jasper Generating Station (SC) -	71.6 for both Plant McIntosh and Savannah River Mill*	Yes – into SC (western portion of Jasper County, SC)
IP - Savannah	Chatham (GA)	Less than 5 km	None	66 <i>(based on 2011-2013 actual and allowable/ PTE)</i>	Yes – into SC (western portion of Jasper County, SC)

				<i>emissions)</i>	
Duke - Allen	Gaston (NC)	5 km	Duke - Marshall	46.6 (<i>based on 2013-2015 actual SO₂ emissions</i>)	Yes – into SC (York County and portions of Cherokee, Union, Chester, Lancaster, and Chesterfield Counties in SC)
Duke - Marshall	Catawba (NC)	53 km	Duke - Allen	68 (<i>based on 2013-2015 actual SO₂ emissions</i>)	Yes – into SC (small portion of York and Cherokee Counties in SC)

* Savannah River Mill's 2010 1-hour SO₂ modeled DV is based on 2012-2014 actual emissions for three primary power boilers and allowable/PTE emissions for 13 emissions units at Savannah River Mill. (For more details, see pp. 67-68 of EPA's *Technical Support Document: Chapter 10 Proposed Round 3 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard for Georgia* located at https://www.epa.gov/sites/production/files/2017-08/documents/10_ga-so2-rd3-final.pdf.)

As mentioned previously, EPA finds that it is appropriate to examine the impacts of SO₂ emissions from stationary sources in South Carolina in distances ranging from zero km to 50 km from the sources. Therefore, in addition to those sources addressed in Tables 3 and 4 of this action, EPA assessed the potential impacts of SO₂ emissions from stationary sources not subject to the DRR and located up to 50 km from South Carolina's borders to evaluate trends in area-wide air quality. Table 5 lists sources in South Carolina not characterized under the DRR²⁶ that emitted greater than 100 tpy of SO₂ in 2017 and are located within 50 km of the State's border. All three of the identified sources were located along the border of South Carolina and North Carolina.

²⁶ One source, Westrock CP, LLC accepted a permit limit to exempt out of being subject to the DRR.

Table 5: South Carolina Non-DRR SO₂ Sources Emitting Greater Than 100 TPY Near Neighboring States					
South Carolina Source	2017 Annual SO₂ Emissions (tons)	Approximate Distance to South Carolina Border (km)	Closest Neighboring State	Approximate Distance to Nearest Neighboring State SO₂ Source (km)	Nearest Neighboring State SO₂ Source & 2017 Emissions (>100 Tons of SO₂)
Milliken & Co. Magnolia Plant	697	5.5	North Carolina	23	Duke Energy Carolinas, LLC - Cliffside Steam Station (858 tons)
Guardian Industries	103	22.5	North Carolina	53	Duke - Allen (354 tons)
WestRock CP LLC	1,480	44	North Carolina	68	Pilkington North America, Inc. (Pilkington) (383 tons)

Currently, EPA does not have monitoring or modeling data suggesting that North Carolina is impacted by SO₂ emissions from the Milliken & Co. Magnolia Plant or WestRock CP LLC.

With regard to the WestRock facility, EPA believes that the 68-km distance between the WestRock facility in South Carolina and the Pilkington facility, the nearest source in North Carolina with SO₂ emissions greater than 100 tpy, makes it unlikely that SO₂ emissions from WestRock could interact with SO₂ emissions from Pilkington in such a way as to contribute significantly to nonattainment in North Carolina.

Allowable SO₂ emissions from the Guardian Industries facility were included in South Carolina's modeling of the Resolute DRR source,²⁷ which was addressed in Table 3. This modeling did not show any violations of the 2010 1-hour SO₂ NAAQS within 50 km of the

²⁷ See pp.81-82 and p.92 of EPA's *Technical Support Document: Chapter 37 Intended Round 3 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard for South Carolina* located at: https://www.epa.gov/sites/production/files/2017-08/documents/38sc_so2_rd3-final.pdf.

South Carolina border, and thus, indicates that Guardian Industries does not significantly contribute to nonattainment of the 2010 1-hour SO₂ NAAQS in any other state.

The modeling results in Tables 3 and 4 predict no violations of the 2010 1-hour SO₂ NAAQS within 50 km of the South Carolina border, and thus, EPA believes that these results, weighed along with the other factors in this document and the Agency's analysis of the South Carolina sources addressed in Table 5, support EPA's proposed conclusion that sources in South Carolina do not significantly contribute to nonattainment of the 2010 1-hour SO₂ NAAQS in any other state.

2. SO₂ Emissions Trends

a. State Submission

As part of its SIP submission, South Carolina presented SO₂ emissions trends both statewide (for the years 2008-2014) and for the State's title V sources (for the years 2008-2016). Statewide SO₂ emissions have decreased by approximately 73 percent from 197,136 tpy in 2008 to 52,782 tpy in 2014,²⁸ and SO₂ emissions from South Carolina's title V sources have decreased by approximately 88 percent from 191,058 tpy in 2008 to 22,422 tpy in 2016.

b. EPA Analysis

EPA reviewed the statewide and title V source SO₂ emissions trends data provided by South Carolina and agrees that the data show a significant decline (73 and 88 percent, respectively, as noted earlier). Based on the emissions trends information in South Carolina's submission, EPA believes that these declining SO₂ emissions may suggest that South Carolina does not significantly contribute to nonattainment of the 2010 1-hour SO₂ NAAQS in any other

²⁸ EPA notes there is a slight difference in the 2014 NEI value for South Carolina's SO₂ emissions between what SC DHEC provided based on version 1 of the NEI (52,782 tpy) and the value that EPA relied upon from version 2 of the NEI (52,794 tpy).

state, particularly given that SO₂ emissions limits for South Carolina's title V sources are federally enforceable conditions established in title V permits.

3. SO₂ Ambient Air Quality

a. State Submission

In its June 25, 2018, SIP submission, SC DHEC illustrated graphically that the DVs from 2008 through 2017 at nine out of 10 monitors in South Carolina in EPA's Air Quality System (AQS)²⁹ ("AQS monitors") have remained well below the 2010 1-hour SO₂ NAAQS since 2008.³⁰ The one monitor with data above the 2010 1-hour SO₂ NAAQS from 2008 to 2010 attained the standard in 2011, and the DVs for this monitor sharply decreased between 2011 to 2017. SC DHEC notes that the State's AQS monitors are all attaining the 2010 1-hour SO₂ NAAQS and the DVs at these monitors show a consistent downward trend. In addition, SC DHEC noted that the highest monitored DV in the State for the 2014-2016 time period is 29 ppb, which is 39 percent of the 2010 1-hour SO₂ NAAQS.

SC DHEC also included a figure displaying AQS monitors located in South Carolina and in other states within 50 km of the South Carolina border. This figure depicts a total of 14 AQS monitors (seven South Carolina monitors with DVs; four monitors in other states with DVs; and three AQS monitors in North Carolina that were established to characterize the air quality around specific sources subject to EPA's DRR to inform the Agency's future round 4 designations for the 2010 1-hour SO₂ NAAQS in lieu of modeling (hereinafter referred to as "DRR monitors"). Of the 11 monitors with DVs, 10 monitors have had DVs at or just below the 2010 1-hour SO₂ NAAQS since the 2009-2011 DV time period, and all DVs have been below the standard since

²⁹ EPA's AQS contains ambient air pollution data collected by EPA, state, local, and tribal air pollution control agencies. See <https://www.epa.gov/air-trends/air-quality-design-values>.

³⁰ Three of the 10 monitors located in South Carolina shown in the figure on p.8 of the State's June 25, 2018, SIP submission (named "DHEC," "Powdersville," and "York") have shut down.

the 2013-2015 DV period. Two of the North Carolina DRR monitors within 50 km of South Carolina have annual 99th percentile 1-hour SO₂ concentrations above the 2010 1-hour SO₂ NAAQS for 2017. SC DHEC also provided the highest monitored SO₂ DVs for the years 2014-2016 at AQS monitors anywhere in Florida, Georgia, and North Carolina (i.e., 81, 60, and 23 ppb, respectively).³¹ SC DHEC notes that the nearest SO₂ nonattainment area is the Nassau County partial area³² in Florida, which is over 150 km from the South Carolina border.

b. EPA Analysis

Since the time of development of South Carolina's SIP submission, certified AQS monitoring data has become available for South Carolina and the surrounding states to inform the 2015-2017 DVs. EPA has summarized the DVs from 2012 to 2017 for AQS monitors in South Carolina within 50 km of another state in Table 6 and for AQS monitors in the surrounding states of Georgia and North Carolina within 50 km of South Carolina in Table 7 using relevant data from EPA's AQS DV reports for recent and complete 3-year periods.

Table 6: 2010 1-Hour SO₂ DVs for AQS Monitors in South Carolina Within 50 Km of Another State's Border								
County	AQS Site Code	2010-2012 DV (ppb)	2011-2013 DV (ppb)	2012-2014 DV (ppb)	2013-2015 DV (ppb)	2014-2016 DV (ppb)	2015-2017 DV (ppb)	Approximate Distance to State Border (km)
Greenville	450450008	*ND	*ND	*ND	3	2	2	37 (NC)
Oconee	450730001	*ND	*ND	*ND	3	2	2	3 (GA)

* ND indicates "No Data" due to monitor startup or shutdown (operated less than three years), data quality issues, or incomplete data.

³¹ EPA notes that Florida is not adjacent to South Carolina.

³² The term "partial area" in this instance refers to when EPA has designated a portion a county nonattainment for a NAAQS.

As shown in Table 6, the 2015, 2016, and 2017 DVs for the two monitoring sites in South Carolina (Greenville and Oconee Counties) within 50 km of another state's border have remained well below the 2010 1-hour SO₂ NAAQS.

Table 7 shows that there are three AQS monitors in Georgia (Chatham and Richmond Counties) and one AQS monitor in North Carolina (Mecklenberg County) with 3-year DVs which are located within 50 km of the South Carolina border. Currently, there are no AQS monitors indicating a violation of the 2010 1-hour SO₂ NAAQS located within 50 km of South Carolina in the surrounding states of Georgia and North Carolina. Further, the DVs for the monitors in Table 7 have declined since 2013 for Georgia's Chatham County monitor with AQS site code 130511002 and since 2012 for North Carolina's Mecklenberg County monitor. For Georgia's Richmond County monitor and Chatham County monitor with AQS site code 130511002, the DVs similarly show a downward trend, excluding those time periods for which there is no data to determine a DV. Also, the most recent DVs for 2015-2017 are well below the 2010 1-hour SO₂ NAAQS. Thus, EPA believes that these data support EPA's proposed conclusion that South Carolina does not significantly contribute to nonattainment of the 2010 1-hour SO₂ NAAQS in any other state.

Table 7: 2010 1-Hour SO₂ DVs for AQS Monitors Within 50 Km of South Carolina in Surrounding States

State	County	AQS Site Code	2010-2012 DV (ppb)	2011-2013 DV (ppb)	2012-2014 DV (ppb)	2013-2015 DV (ppb)	2014-2016 DV (ppb)	2015-2017 DV (ppb)	Approximate Distance to SC Border (km)
Georgia	Chatham	130511002	68	79	78	70	52	48	3
	Chatham	130510021	74	66	*ND	*ND	*ND	32	2
	Richmond	132450091	*ND	*ND	*ND	61	60	52	6
North Carolina	Mecklenberg	371190041	14	10	7	7	5	5	20

*ND indicates “No Data” due to monitor startup or shutdown (operated less than three years), data quality issues, or incomplete data.

As previously discussed, EPA’s definitions of spatial scales for SO₂ monitoring networks indicate that distances up to 50 km from a stationary source would be useful for assessing trends in area-wide air quality. Thus, EPA also evaluated monitoring data provided to date for DRR monitors located in states adjacent to South Carolina within 50 km of the State’s border. These DRR monitors do not have three or more years of complete data to determine the DVs for these monitors. However, EPA evaluated the available, annual 99th percentile SO₂ concentration data for these monitors.

No sources in South Carolina elected to establish monitors under the DRR. However, Table 8 lists three DRR sources in North Carolina within 50 km of the South Carolina border which elected to establish SO₂ monitors to characterize the air quality in the associated source areas. The Buncombe County monitor in North Carolina was sited in the vicinity of the Asheville Steam Electric Plant - Duke Energy Progress, Inc (Duke-Asheville), a DRR source. Though a single maximum 1-hour concentration is not directly comparable to the 2010 1-hour SO₂ NAAQS, which is in the form of the 3-year average of the 99th percentile of daily maximum 1-hour SO₂ values, EPA notes that the highest concentration observed at the Buncombe County

monitor in 2017 was 16.6 ppb, which is approximately 78 percent below the level of the 2010 1-hour SO₂ NAAQS. The other two DRR monitors in North Carolina within 50 km of South Carolina - the Brunswick and Haywood County monitoring sites - both exceeded the 2010 1-hour SO₂ NAAQS based on one year of complete data for 2017. For 2018, only the Haywood County monitoring site exceeded the 2010 1-hour SO₂ NAAQS. The Brunswick and Haywood County monitoring sites are sited in the area of maximum concentration for the DRR sources named CPI USA North Carolina - Southport Plant (CPI) and Evergreen Packaging Group-Canton Mill (Evergreen), respectively.

EPA evaluated whether there are any sources in South Carolina within 50 km of the State's border which could potentially be contributing to the exceedances in 2017 and 2018 at the Brunswick County and Haywood County monitors in North Carolina. With respect to the Haywood County monitor, there is only one source in South Carolina within 50 km of the State's border in the direction of the Haywood County monitor. This source, Milliken Enterprise Plant, is located approximately 12.5 km from the South Carolina border and emitted 4.25, 4.25, and 0.05 tons of SO₂ in 2015, 2016, and 2017, respectively. EPA believes that the Milliken Enterprise Plant is not contributing to the exceedances at the Haywood County monitor due to the source's distance of approximately 72.5 km from the monitor and the declining SO₂ emissions trend from 2015 to 2017. With respect to the Brunswick County monitor, there are two sources in South Carolina within 50 km of the State's border in the direction of the Brunswick County monitor. The two sources, Horry County Solid Waste Authority and Santee Cooper Myrtle Beach, are located approximately 31 km and 37 km, respectively, from the South Carolina border in the direction of the Brunswick County monitor. The Horry County Solid Waste Authority emitted 13.12, 13.12, and 12.88 tons of SO₂ in 2015, 2016, and 2017,

respectively. The Santee Cooper Myrtle Beach facility emitted 0.02, 0.01, and 0.03 tons of SO₂ in 2015, 2016, and 2017, respectively. EPA believes that the Horry County Solid Waste Authority and the Santee Cooper Myrtle Beach facility are not contributing to the exceedances at the Brunswick County monitor due to the sources' distances of approximately 79 km and 85 km, respectively, from the monitor. Thus, after careful review of the State's assessment, supporting documentation, available monitoring data, and EPA's analysis suggesting that there are no sources in South Carolina within 50 km of the Brunswick and Haywood County DRR monitors which could be contributing to the exceedances at the Brunswick and Haywood County DRR monitors, EPA proposes to conclude that these monitoring data do not provide evidence of South Carolina contributing significantly to 2010 1-hour SO₂ violations in the neighboring states.

Table 8: 2010 1-Hour SO₂ 99th Percentile Concentrations for Round 4 DRR Monitors Within 50 Km of South Carolina Located in Surrounding States					
County (State)	Round 4 Monitored Source	AQS Site Code	2017 99th Percentile Concentration (ppb)	2018 99th Percentile Concentration - (ppb)	Approximate Distance to SC Border (km)
Buncombe (NC)	Duke-Asheville	370210037	16.6	9.8	32
Brunswick (NC)	CPI	370190005	82.5	55.1	50
Haywood (NC)	Evergreen	370870013	206.8	213.4	48

4. SIP-Approved Regulations and State Statutes Addressing SO₂ Emissions

a. State Submission

South Carolina identified State statutes and SIP-approved measures which help ensure that SO₂ emissions in the State do not significantly contribute to nonattainment of the 2010 1-hour SO₂ NAAQS in any other state. SC DHEC lists the following SIP-approved South Carolina regulations which establish emission limits and other control measures for SO₂: Regulation 61-

62.5, Standard No. 7, *Prevention of Significant Deterioration*; Regulation 61-62.5, Standard No. 7.1, *Nonattainment New Source Review*; Regulation 61-62.96, *Nitrogen Oxides (NO_x) and Sulfur Dioxide (SO₂) Budget Trading Program*; Regulation 61-62.97, *Cross-State Air Pollution Rule (CSAPR) Trading Program*; and Regulation 61-62.1, *Definitions and General Requirements*. In addition, SC DHEC promulgated Regulation 61-62.72, *Acid Rain*, to comply with the EPA's Acid Rain Program, enacted to reduce acid deposition by reducing SO₂ and NO_x emissions from fossil fuel-fired power plants. SC DHEC also notes that South Carolina's Pollution Control Act, SC Code Section 48-1-10 et seq., and *State Agency Rule Making and Adjudication of Contested Cases*, SC Code Section 1-23-10 et seq., provide for control of SO₂ emissions in the State.³³

b. EPA Analysis

EPA believes that South Carolina's statutes and SIP-approved measures which establish emission limits, permitting requirements, and other control measures for SO₂ effectively address emissions of SO₂ from sources in the State. For the purposes of ensuring that SO₂ emissions at new major sources or major modifications at existing major sources in South Carolina do not contribute significantly to nonattainment or interfere with maintenance of the NAAQS, the State has a SIP-approved major source new source review (NSR) program. South Carolina's SIP-approved nonattainment NSR regulation is Regulation 61-62.5, Standard No. 7.1 - *Nonattainment New Source Review*, which applies to the construction of any new major stationary source or major modification at an existing major stationary source in an area designated as nonattainment. The State's SIP-approved prevention of significant deterioration (PSD) regulation, Regulation 61-62.5, Standard No. 7 - *Prevention of Significant Deterioration*, applies to the construction of any new major stationary source or major modification at an

³³ These South Carolina statutes are not approved into the State's implementation plan.

existing major stationary source in an area designated as attainment or unclassifiable or not yet designated. Regulation 61-62.1, Section II - *Permit Requirements* governs, among other things, the preconstruction permitting of modifications and construction of minor stationary sources in South Carolina. These major (i.e., PSD and nonattainment NSR (NNSR)) and minor NSR rules ensure that SO₂ emissions due to major modifications at existing major stationary sources, modifications at minor stationary sources, and the construction of new major and minor sources in South Carolina will not contribute significantly to nonattainment of the 2010 1-hour SO₂ NAAQS in neighboring states.

5. Federally Enforceable Regulations Addressing SO₂ Emissions in South Carolina

a. State Submission

SC DHEC listed the following EPA rules which reduce SO₂ emissions from various sources: Acid Rain Nitrogen Oxides Emission Reduction Program; PSD/NNSR; Cap and Trade Programs for SO₂ under 40 CFR part 96; Regional Haze; Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements; Mercury and Air Toxics Standards; and the Cross-State Air Pollution Rule. The State notes that the overall effect of these rules has been a 56 percent reduction in SO₂ emissions nationally from 2010 to 2016.

b. EPA Analysis

EPA believes that the federal control measures for SO₂ which South Carolina lists in the State's June 2018 submission effectively address emissions of SO₂ from sources in the State and help ensure that SO₂ emissions from South Carolina do not contribute significantly to nonattainment of the 2010 1-hour SO₂ NAAQS in another state.

6. Conclusion

EPA proposes to determine that South Carolina's June 25, 2018, SIP submission satisfies the requirements of prong 1 of CAA section 110(a)(2)(D)(i)(I). This proposed determination is based on the following considerations: DVs for South Carolina's AQS SO₂ monitors within 50 km of another state's border have remained well below the 2010 1-hour SO₂ NAAQS from 2015-2017; DVs for Georgia's and North Carolina's regulatory monitors within 50 km of South Carolina's border have 2017 DVs below the 2010 1-hour SO₂ NAAQS; modeling for the one South Carolina DRR source within 50 km of another state's border estimates impacts below the 2010 1-hour SO₂ NAAQS; modeling for DRR sources in the surrounding states of Georgia and North Carolina within 50 km of South Carolina indicates that the areas around these sources do not violate the 2010 1-hour SO₂ NAAQS; downward SO₂ emissions trends in South Carolina may suggest that the State's sources are not likely contributing to other states' ability to attain or maintain the 2010 1-hour SO₂ NAAQS; SO₂ emissions from South Carolina sources not subject to the DRR which emitted over 100 tons of SO₂ in 2017 are not likely interacting with SO₂ emissions from the nearest source in a bordering state in such a way as to contribute significantly to nonattainment in North Carolina; annual 99th percentile 1-hour SO₂ concentrations at the Buncombe County DRR monitor in North Carolina are well below the 2010 1-hour SO₂ NAAQS; and current South Carolina statutes and SIP-approved measures and federal emissions control programs adequately control SO₂ emissions from sources within South Carolina.

Based on the analysis provided by South Carolina in its SIP submission and EPA's analysis of the factors described in section III.C, EPA proposes to find that sources within South Carolina will not contribute significantly to nonattainment of the 2010 1-hour SO₂ NAAQS in any other state.

D. EPA's Prong 2 Evaluation – Interference with Maintenance of the NAAQS

Prong 2 of the good neighbor provision requires state plans to prohibit emissions that will interfere with maintenance of a NAAQS in another state.

1. State Submission

In its June 25, 2018, SIP submission, SC DHEC states that South Carolina's SIP contains adequate provisions to prevent sources and emissions activities within South Carolina from interfering with maintenance of the 2010 1-hour SO₂ NAAQS in any other state based on the downward trend in SO₂ emissions in the State and the Southeast and on federal and state control measures. As discussed in section III.A, SC DHEC included statewide SO₂ emissions trends in its SIP submittal which show that SO₂ emissions have declined since approximately 2005 and are continuing to decline. SC DHEC included a figure showing SO₂ emissions trends in the Southeast from 2000 to 2016 and indicated that there is a consistent downward trend in SO₂ emissions over this time period. The State noted that these SO₂ emissions reductions are primarily due to federal regulations requiring pollution control devices and the decreased use of coal for electricity. In addition, as discussed in sections III.C.4 and III.C.5, SC DHEC has statutes and SIP-approved measures which address sources of SO₂ emissions in South Carolina and there are also federal measures that control SO₂ emissions in the State.

2. EPA Analysis

In *North Carolina v. EPA*, the D.C. Circuit explained that the regulating authority must give prong 2 "independent significance" from prong 1 by evaluating the impact of upwind state emissions on downwind areas that, while currently in attainment, are at risk of future nonattainment. *North Carolina v. EPA*, 531 F.3d at 910-911 (D.C. Cir. 2008). For the prong 2 analysis, EPA evaluated the emissions trends provided by South Carolina for the State and the Southeast, evaluated air quality data, and assessed how future sources of SO₂ are addressed

through existing SIP-approved and federally enforceable regulations. Given the continuing trend of decreasing SO₂ emissions from sources within South Carolina and the fact that all areas in other states within 50 km of the South Carolina border have DVs attaining the 2010 1-hour SO₂ NAAQS, EPA believes that evaluating whether these decreases in emissions can be maintained over time is a reasonable criterion to ensure that sources within South Carolina do not interfere with its neighboring states' ability to maintain the 2010 1-hour SO₂ NAAQS.

Regarding SO₂ air quality trends in the southeastern United States, EPA notes that this region of the country has experienced an 82 percent decrease in the annual 99th percentile of daily maximum 1-hour averages between 2000 and 2017 based on 24 monitoring sites, and the most recently available data for 2017 indicates that the mean value at these sites was approximately 14 ppb.³⁴ When this trend is evaluated alongside the monitored SO₂ concentrations within South Carolina as well as the SO₂ concentrations recorded at regulatory monitors in the surrounding states of Georgia and North Carolina shown in Tables 6 and 7 of this document, EPA believes that emissions trends in South Carolina due to sources from within the State are not significantly different than the overall decreasing monitored SO₂ concentration trend in the Southeast. With respect to air quality data trends, the current 2015-2017 DVs for AQS SO₂ monitors both in South Carolina within 50 km of another state's border and in Georgia and North Carolina within 50 km of South Carolina's border are below the 2010 1-hour SO₂ NAAQS. Further, modeling results for DRR sources within 50 km of South Carolina's border both within the State and in the states of Georgia and North Carolina demonstrate attainment of the 2010 1-hour SO₂ NAAQS, and thus, demonstrate that South Carolina's largest point sources

³⁴ See <https://www.epa.gov/air-trends/sulfur-dioxide-trends>.

of SO₂ are not expected to interfere with maintenance of the 2010 1-hour SO₂ NAAQS in another state.

As discussed in sections III.C.4 and III.C.5, EPA believes that federal and State regulations and statutes that both directly and indirectly reduce emissions of SO₂ in South Carolina help ensure that the State does not interfere with maintenance of the NAAQS in another state. SO₂ emissions from future major modifications and new major sources will be addressed by South Carolina's SIP-approved major NSR regulations described in section III.C.4. In addition, South Carolina has a SIP-approved minor NSR permit program addressing small emission sources of SO₂. The permitting regulations contained within these programs are designed to ensure that emissions from these activities do not interfere with maintenance of the NAAQS in the State or in any other state.

3. Conclusion

EPA proposes to determine that South Carolina's June 25, 2018, SIP submission satisfies the requirements of prong 2 of CAA section 110(a)(2)(D)(i)(I). This determination is based on the following considerations: SO₂ emissions statewide from 2008 to 2014 in South Carolina have declined significantly; current South Carolina statutes and SIP-approved measures and federal emissions control programs adequately control SO₂ emissions from sources within South Carolina; South Carolina's SIP-approved PSD and minor source NSR permit programs will address future large and small SO₂ sources; current DVs for AQS SO₂ monitors both in South Carolina within 50 km of another state's border and in Georgia and North Carolina within 50 km of South Carolina's border are below the 2010 1-hour SO₂ NAAQS; and modeling for DRR sources within 50 km of South Carolina's border both within the State and in Georgia and North Carolina demonstrates that South Carolina's largest point sources of SO₂ are not expected to

interfere with maintenance of the 2010 1-hour SO₂ NAAQS in another state. Based on the analysis provided by South Carolina in its SIP submission and EPA's supplemental analysis of the factors described in section III.C and III.D of this document, EPA proposes to find that emission sources within South Carolina will not interfere with maintenance of the 2010 1-hour SO₂ NAAQS in any other state.

IV. Proposed Action

In light of the above analysis, EPA is proposing to approve South Carolina's June 25, 2018, SIP submission as demonstrating that South Carolina's SIP has adequate provisions prohibiting any source or other type of emissions activity in the State from emitting any air pollutant in amounts that will contribute significantly to nonattainment or interfere with maintenance of the 2010 1-hour SO₂ NAAQS in another state.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. *See* 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. This action merely proposes to approve state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Is not an Executive Order 13771 (82 FR 9339, February 2, 2017) regulatory action because SIP approvals are exempted under Executive Order 12866;

- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this proposed action for South Carolina does not have Tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000) because it does not have substantial direct effects on an Indian Tribe. The Catawba Indian Nation Reservation is located within the boundary of York County, South Carolina. Pursuant to the Catawba Indian Claims

Settlement Act, S.C. Code Ann. 27-16-120, “all state and local environmental laws and regulations apply to the [Catawba Indian Nation] and Reservation and are fully enforceable by all relevant state and local agencies and authorities.” However, EPA has determined that this proposed rule does not have substantial direct effects on an Indian Tribe because this proposed action is not approving any specific rule, but rather proposing to determine that South Carolina’s already approved SIP meets certain CAA requirements. EPA notes that these proposed actions will not impose substantial direct costs on Tribal governments or preempt Tribal law.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Particulate Matter, Reporting and recordkeeping requirements, Sulfur oxides.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: April 11, 2019.

Mary S. Walker,

Acting Regional Administrator,

Region 4.

[FR Doc. 2019-07921 Filed: 4/22/2019 8:45 am; Publication Date: 4/23/2019]